

# Prototype All Sky Imager (PASI)

Real-time Streaming Correlation for Long Wavelength Array (LWA) Radio Astronomy Applications

## PASIFX Software

A cross-correlation code developed for high-performance processing of the 256 antennas at a single LWA station using x86-64 processors

- Developed at LANL and licensed to LWA
- Makes extensive use of
  - Streaming SIMD Extensions (SSE)
  - Pthreads
  - Careful data layout to achieve high performance

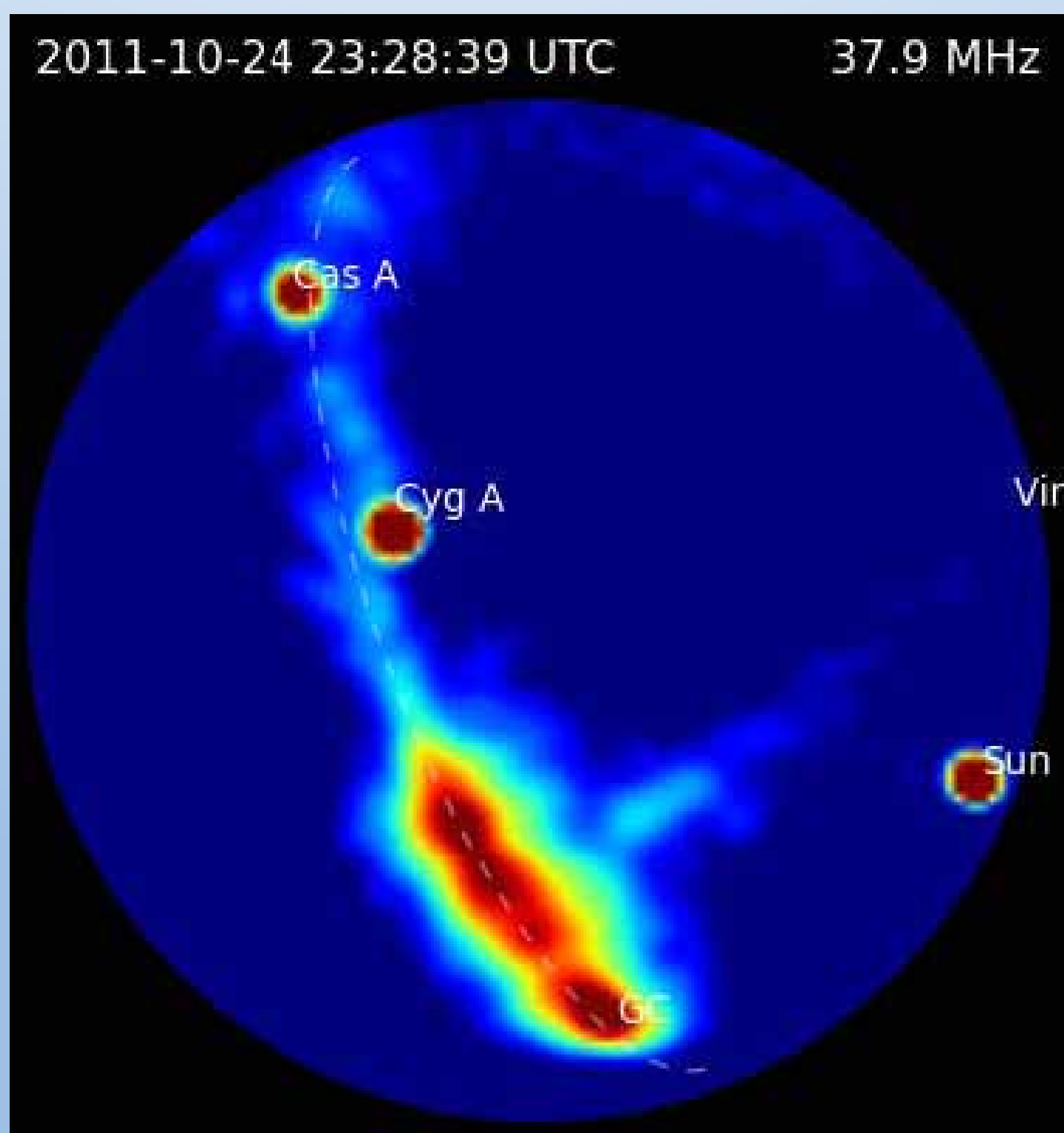


Image from PASI

The code also uses MPI to stream data from node to node in the pipeline. For the FFT processing, FFTW version 3.2.2 is used in single precision mode with SSE and threading enabled.